



Applicant : Henry Michaels Beisner  
Appl. No. : 09/847,093  
Filed : 05/02/2001  
Title : Adaptive Filter to Reduce Multipath  
Grp./A.U. : 3662  
Examiner : Brian K. Andrea

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Appeal Brief  
& Book  
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Honorable Commissioner for Patents

Washington, DC 20231

## APPEAL

Sir:

This is a brief appealing the rejection of the above identified application. Enclosed is a reference used in supporting this appeal: the book entitled "Digital Signal Processing" by Monson H. Hayes, a Schaum's Outline by McGraw-Hill 1999.

The original application was understandable by anyone with ordinary skill in the art of digital signal processing. The concept is simple, but unique, and is easily understandable by anyone who knows digital signal processing. The coefficients of a digital filter are adjusted by least squares to minimize a residual which originally consists of a desired signal plus undesired reflections and targets. Since, by design, the desired signal cannot be affected, and since the digital filter can replicate the reflections precisely, the reflections are removed and the resulting residual is a purified version of the desired signal. Some of the replicas are targets which are tracked. The replicas are formed by feeding back the purified signal into the adjustable digital filter. The exactness of the replicas and, therefore, the purity of the desired signal is limited only by the number of filter coefficients. The uniqueness of the process is due to the fact that it simultaneously forms the replicas and purifies the signal and, by doing this nearly exactly, achieves performance superior to other techniques.

The examiner, obviously, does not have ordinary skill in the art of digital signal processing, for, as he says, he could not understand the application. He blamed the applicant for the examiner's inability to comprehend. When his objections were addressed in the first amendment by the addition of nonessential explanatory matter, he claimed that it was new matter. This is a catch 22 situation. He asks for explanation and when it is given, he says it is new matter. The sum of it is that he is unskilled in the art and no explanation would be adequate.

The enclosed book titled "Digital Signal Processing" by Monson H. Hayes, a Schaum's Outline by McGraw-Hill 1999, contains what one should know after a course in digital signal processing, that is, what one with ordinary skill in the art should know.

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This book describes the concepts and techniques used in the original application. Any fair minded engineer would admit that if you understand the contents of this book, you can understand the original application.

The examiner had trouble understanding the process of converting the signal from analog to complex digital samples. This is covered in detail by Hayes: p. 101, "Sampling" and "Analog-to-Digital Conversion"; p. 110, "Sampling Rate Reduction" with a low pass filter; p. 2, "Complex Sequences"; p. 1, "Discrete Time Signals."

The examiner does not understand the rudiments of digital filters. He had trouble understanding the operation of our filter. Note that the equation in our original application describing our filter, the output of which is the residual, is nearly identical to the equations of the filters described by Hayes: p. 15, eq. (1.11); p. 64, eq. (2.5); p. 183, eq. (5.2); p. 287; p. 292, eq. (8.3) and Figure 8-5; p. 377, eq. (9.13). These are merely general equations describing the operation of any digital filter.

The original application described the use of least squares to determine the coefficients of the Digital Filter. The book by Hayes has a section on p. 376: "9.5 Filter Design Based on a Least Squares Approach." Anyone understanding this section would have no trouble understanding the method described in the original application.

An outstanding example of the lack of knowledge of the examiner is his inability to understand what is meant by "least squares". He objected that the original application did not have an explanation of how the filter coefficients were determined, even though the application said they were determined by least squares and an example of the operation was given in the form of a computer program with results. When a specific, nonessential, example was given in the amendment, he claimed it was new matter. Not only that, but, he still didn't understand it. Note that the filter represented by eq. (9.13) on p. 377 of Hayes, under the topic of "Filter Design Based on a Least Squares Approach", has the nearly identical form of the filter equation in the original application. If you can understand eq. (9.13) and the book, you can understand the use of least squares in the original application.

If the examiner was familiar with the contents of Hayes, that is, had ordinary skill in the art of digital signal processing, he should have had no difficulty understanding the original application.

In addition, an improper action of the examiner was, in his response to the amendment, his item 7, he rejects the claims under the second paragraph of 35 U.S.C. 112, MPEP 7.34.01: claims are indefinite. This refers to the claims only, not to the specification, however, not one criticism is directed to the claims. All his criticisms are directed to the specification. The examiner's justification of this is in the sentence, his item 8, "Claims are generally read in light of the specification and in this case, the specification is needed to interpret the claims," where the examiner links the claims to

the specification. This sentence is an almost perfect definition of what is meant by "enablement": the specification should enable the claims.

The examiner also says that he objects, his item 4, to the specification as being incomprehensible, MPEP 7.02, under the first paragraph of 35 U.S.C. 112, MPEP 7.30.01: enablement. His entire criticism of the disclosure is directed to the specification as being incomprehensible, yet, he did not reject the disclosure under the first paragraph by using paragraphs 7.31.01 - 7.31.04 as called for in the MPEP. He didn't do this because, according to 2164.04 of the MPEP the burden of proof under enablement is on the examiner and he knows that defending his position would be difficult.

The reason that this brief is being submitted after the two month period is that I have a one man corporation, Paradeigma, Inc. I have just completed two contracts with Lockheed Martin Corp. I have been quite busy as I must do the work, write the reports, keep the books and tax records, comply with government regulations, marketing for new business, etc.

Respectfully submitted,

Signed: *Henry Michaels Beisner*

Date: *2/8/2004*

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